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Guidelines for Breast Cancer Management in Bosnia and Herzegovina

Lejla Hadžikadić-Gušić1*, Timur Cerić2, Inga Marijanović4, Ermina Iljazović3, Dijana Koprić3, Anela Zorlak6, Mahira Tanović7, Alma Mekić-Abazović5, Ibrahim Šišić5, Una Delić2, Jasminka Mustedanagić-Mujanović3, Alija Aginčić8, Edin Bećiragić9, Frederick L Greene1

1 Department of Surgical Oncology, Levine Cancer Institute, Atrium Health, Charlotte, NC, USA.

2 Department of Medical Oncology, University Clinical Center, Sarajevo, BiH.

3 Department of Pathology, University Clinical Center, Tuzla, BiH.

4 Department of Medical Oncology, University Clinical Center, Mostar, BiH.

5 Department of Medical Oncology, Kanton Hospital Zenica, Zenica, BiH

6 Genetics Counseling, Genetika, Sarajevo, BiH

7 Department of Plastic and Reconstructive Surgery, Advanced Plastic Surgery of North Shore, NY, USA

8 Department of Plastic and Reconstructive Surgery, Naša Mala Klinika (Our Little Clinic, Sarajevo)

9 Department of Surgery, Dr. Abdulah Nakas General Hospital, Sarajevo, BiH

*Corresponding author:

Lejla Hadžikadić-Gušić, Department of Surgery, Levine Cancer Institute, 1021 Morehead Medical Drive, Charlotte, North Carolina, 28204, USA.
E-mail: lejla.hadzikadic-gusic@atriumhealth.org;

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ABSTRACT

Breast cancer is the most common cancer among women. In Bosnia and Herzegovina (B&H), accurate data on the status of breast cancer are lacking due to the absence of a central registry. Multiple international guidelines imply that institutions that monitor breast cancer patients should have optimal therapeutic options for treatment. In addition, there have been several international consensus guidelines written on the management of breast cancer. Application of consensus guidelines have previously been demonstrated to have a positive influence on breast cancer care [1, 2]. The importance of specialty breast centers has previously been reported [3]. As part of the 2021 Bosnian-Hercegovinan American Academy of Arts and Sciences (BHAAAS) conference in Mostar, a round table of multidisciplinary specialists from Bosnia and Herzegovina and the diaspora was held. All were either members of BHAAAS or regularly participate in collaborative projects. The focus of the consortium was to write the first multidisciplinary guidelines for the general management of breast cancer in Bosnia and Herzegovina. The grading system used is reported in Table 1 [4]. Statements without use of a grading system were considered standard clinical practice by our panel of experts (see Table 2). Guidelines were developed for each area of breast cancer treatment and management. These guidelines will serve as a resource for practitioners managing breast cancer in the Bosnia and Hercegovina region. This might also be of benefit to the ministry of health and any future investors interested in developing breast cancer care policies in this region of the world.

KEYWORDS: Breast cancer; Bosnia and Hercegovina; treatment; guidelines; consortium, breast, multi-disciplinary
INTRODUCTION

Breast cancer is the most common cancer among women. In 2020, the World Health Organization (WHO) announced that 2.3 million women worldwide suffer from breast cancer, with 685,000 deaths worldwide. According to their estimates, by the end of 2020, there will be 7.8 million women who have been diagnosed with breast cancer in the last 5 years [5]. In Bosnia and Herzegovina (B&H), accurate data on breast cancer are not known. Without a central registry, it is difficult to obtain accurate data on the status of breast cancer in B&H [6]. The management of breast cancer is unique, and patient centered. It is divided into three disciplines: surgical oncology, medical oncology, and radiation oncology. Surgical treatment is composed of tumorectomies/lumpectomies and mastectomies of the breast, sentinel axillary biopsies, and axillary dissections. Medical oncology therapy is comprised of chemotherapy, immunotherapy, and anti-hormone therapy. Radiation is typically one of the last treatments, but it can be used at other times as well. The guidelines of the National Comprehensive Cancer Network (NCCN) for the treatment of breast cancer imply that institutions that monitor breast cancer patients should have optimal therapeutic options [7]. There are no optimal therapeutic options in B&H due to financial and organizational reasons.

As part of the 2021 Bosnian-Hercegovinian American Academy of Arts and Sciences (BHAAAS) conference in Mostar, a round table of specialists from B&H and the diaspora was held. All were either members of BHAAAS or regularly participate in collaborative projects. This multidisciplinary consortium consisted of physicians from various disciplines, namely surgical oncology, medical oncology, radiation oncology, plastic and reconstructive surgery, pathology, radiology, and genetics. The focus of the consortium was to write the first multidisciplinary guidelines for the general management of breast cancer in B&H.

Herein, we present the guidelines for the management of breast cancer by physicians located
within the B&H geographical region and those living in the diaspora, as members from BHAAAS or collaborators. Guidelines are presented by cancer management topic.

**MATERIALS AND METHODS**

As part of the BHAAAS annual conference, Dr. Hadzikadic-Gusic hosts a breast cancer symposium. In 2021, in part due to the COVID 19 pandemic, this was held virtually. In lieu of a traditional educational symposium, an open round table was held with invited guests from the spectrum of multidisciplinary specialists in the care of breast cancer who were either members of BHAAAS or have participated in several collaborative projects. In addition, this was open to the public and well attended. The guidelines presented herein were established at this round table by this consortium of specialists from the B&H region and diaspora. Guidelines were evidence based and the most recent literature was reviewed per specialty. Consideration was given to regional access to care and therapeutic options when recommendations were made. All authors have commented and approved these guidelines. Dr. Greene was invited as the senior author given his experience in global cancer care, particularly breast cancer, his involvement in the American College of Surgeons, and work both nationally in the United States and abroad.

**GUIDELINES BY DISCIPLINE**

**Radiology - Screening Mammography**

We highly recommend annual screening mammography for women of average risk under 55 years old. Average risk is defined as women who do not have a personal history of breast cancer, or a strong family history of breast or ovarian cancer. Women 55 years and older of average risk are recommended to have at least a mammogram every 2 years, but they can be offered an annual mammogram [8-10].

We also strongly recommend screening mammography for all women over 40. In addition, an
earlier mammogram may be considered for women who have a family member with breast cancer as such screening should be started 10 years earlier [8-10]. Where possible, consider adding tomosynthesis. This is presently not performed routinely in all regions of B&H.

**Radiology - Diagnostic Imaging**

Once an abnormality is noted on screening mammogram, additional imaging should be considered. This may consist of a diagnostic mammogram with additional mammographic views, tomosynthesis, ultrasound, or magnetic resonance imaging (MRI) technology. We recommend an ultrasound if the mammogram is abnormal or if the woman has a palpable breast tumor that is not visible by mammogram.

We strongly recommend core needle biopsy (CNB), where possible, of both breast and axillary abnormalities. We recommend minimizing excisional or incisional biopsies where a core needle biopsy can be obtained. We strongly recommend placement of titanium clips in the breast and axilla upon CNB [11, 12]. Currently, this is not routinely performed due to a lack of availability of clips. We strongly recommend the time frame for pathology from CNB to be less than 10 days.

For aid of surgical therapeutic intervention, we strongly recommend tumor localization prior to the operation. This requires that a radiologist place a needle guidewire into the tumor prior to the operation, to guide the surgeon during the lumpectomy or excision. This is currently not routinely performed in all regional locations. In some regions, it is available on request. We recommend this to be an area of focused resource support as it would allow for more breast conservation therapy.

Like the above discussion, we recommend placement of a needle/guidewire into a previously biopsy proven axillary lymph node that was marked with a clip prior to the start of chemotherapy and/or for axillary lymph node localization before a sentinel lymph node biopsy
We do not recommend routine MRI for all patients with breast cancer [13-47]. We do recommend consideration of an MRI of the breast in consultation with a specialist in radiological diagnostics in the following cases: need to evaluate extent of disease due to breast density, need to assess enlargement, size, presence of multifocal/multicentric tumor, mammographic occult diseases, occult primary tumors in the case of Paget's disease of the breast, certain mammographically occult invasive lobular cancers, and need to evaluate the response to neoadjuvant therapy to consider the possibility of cost-effective surgical treatment [13-41, 43-50].

We do recommend MRI in the setting of breast cancer, particularly in the setting to evaluate response to neoadjuvant chemotherapy as it has been shown to be the most accurate modality for comparison of residual tumor size compared to pathologic tumor size among other modalities, with a 90% accuracy [48].

It is strongly recommended that all diagnostics be completed within one month after the diagnosis of breast cancer. It is strongly recommended that all patients be presented to a local multidisciplinary committee after diagnosis and before treatment.

**High Risk Surveillance**

We strongly recommend the Tyrer-Cuzick model for lifelong risk calculation for women [51]. Consider the use of MRI and mammography alternately every 6 months for women at high risk for breast cancer. High risk is defined as a > 20% lifelong risk by risk modeling. Consider the date of birth, breast density, and family history in the calculation.

We strongly recommend the use of MRI for women who have been found to have a pathogenic mutation or clinically actionable variant that elevates the lifetime risk of developing a breast cancer [42, 52, 53].
We also strongly recommend referral of patients to a multidisciplinary commission in the central / city hospital after diagnosis and before treatment in the regional hospital. We suggest a virtual option for the regional council / commission to present patients before treatment in the central / city hospital for the geographic region.

Pathology

    We strongly recommend performing estrogen receptor (ER) and progesterone receptor (PR) immunohistochemistry (IHC) on all malignant breast tumors. We strongly recommend performing Her2 IHC or ISH whether this is with fluorescence in situ hybridization (FISH) or dual color silver in situ hybridization (DC-SISH), when necessary, according to the new ASCO-CAP guidelines, on all malignant breast tumors [54-58]. We strongly recommend Ki67 IHC or grade reporting on all malignant breast tumors. We strongly recommend that pathology is available within 10 days after core needle biopsy (CNB) or operation.

    We strongly recommend reporting residual cancer burden (RCB) class after neoadjuvant chemotherapy.

    Consider that the pathologist is available for intraoperative frozen section when appropriate and when it will change the outcome of the operation performed.

    We strongly recommend using the latest AJCC standards and WHO classification when reporting stage.

Genetics

    We strongly recommend genetic testing BEFORE treatment for breast cancer in patients identified as having a higher risk, defined by a positive family history, date of birth, and tumor histology. When possible, we strongly recommend genetic counseling before and after testing for recommendation of panel testing and discussion of results [7, 59, 60]. We recognize that not all centers have genetic counseling available. If possible, reaching out to a nearby genetic
counseling center should be attempted.

It is strongly recommended to have *BRCA1/BRCA2* testing for women identified as having a higher risk by the Tyrer-Cuzick risk calculation model. Consider additional genetic panels where appropriate (*ATM, CDH1, CHEK2, NBN, NF1, PALB2, STK11*) [7, 61, 62].

When performing genetic counseling, it is recommended to take a detailed family history, examining the father's and mother's family line, the types of malignancies present in both lines, approximate age at diagnosis, if death occurred and approximately at what age, what treatment was given, and genetic testing (if performed), in addition to external factors that could potentially be identified as triggers [7, 10, 59, 63].

We define high risk individuals that might benefit from genetic testing to be:

a) persons who have a personal or family history of breast or ovarian cancer under the age of 40

b) persons who have a personal or family history of breast or ovarian cancer, multiple cancers at a younger age, rare cancers at any age, or cancers associated with the *BRCA1/BRCA2* mutation in one family member

Genetic testing is recommended in asymptomatic patients with a family history. If the patient is found to carry a higher risk of developing breast cancer, options for risk reducing surgery might be available or a strategy for enhanced surveillance may be warranted [64, 65].

In the setting of breast cancer and a positive *BRCA1/BRCA2* test, we strongly recommend tailoring neo-adjuvant or adjuvant chemotherapy recommendations where appropriate with the addition of carboplatin [66-68].

It is strongly recommended to discuss and consider bilateral prophylactic mastectomy for certain mutations to prevent the risk of developing breast cancer. These include pathogenic variants in *BRCA1, BRCA2, PALB2, PTEN*, and *TP53* [7].
We strongly recommend consultation with a plastic surgeon and consideration of immediate simultaneous reconstruction for women who opt for prophylactic mastectomy for prevention. If the patient does not wish to pursue bilateral prophylactic mastectomy, then increased monitoring is recommended. NCCN guidelines recommend annual MRI and mammogram, alternated by 6 months, in addition to bi-annual physical exams. Women should continue to perform monthly breast exams [7].

**Surgical Oncology**

**Breast**

We strongly recommend clearly marking any specimen that is removed from the breast as well as clearly marking a mastectomy specimen as well. There are several methods by which to mark a specimen, including suture marking orientation vs using commercially available markers such as a margin map to clearly denote specimen orientation.

It is strongly recommended that a lumpectomy/partial mastectomy/tumorectomy is performed where possible if breast conservation is not contraindicated. Size of the tumor and size of the breast should be considered for an optimal cosmetic result in addition to optimal oncologic treatment. Multiple randomized controlled trials with long term follow up have demonstrated no survival benefit to more aggressive surgery such as a mastectomy; therefore, breast conservation should be recommended where able [69]. Studies have also shown that women who are able to have breast conservation have higher satisfaction scores for cosmesis when compared to women who have undergone a mastectomy [70].

Use of preoperative localization of tumors is a widely accepted technique utilized internationally for identification of non-palpable tumors. Lumpectomy is often not considered or possible where preoperative localization is not available. For this reason, we strongly recommend that preoperative localization is available for surgeons to utilize breast
conservation therapy.

Consider mastectomy in situations where breast conservation is not feasible. This will also be addressed in the plastic and reconstructive surgery section; however, consider immediate reconstruction at the time of mastectomy if considered to be safe from an oncological standpoint.

Consider bilateral mastectomy in situations where a genetic mutation is involved (see section 3.5). When bilateral mastectomy is performed for prophylactic reasons, consider immediate reconstruction if the patient so desires. Any immediate reconstruction is reasonable including implant-based reconstruction vs autologous tissue reconstruction.

Axilla (N0 clinical disease at time of presentation)

We strongly recommend a sentinel lymph biopsy in clinically node negative patients who are having upfront surgery. This involves patients with all clinical T status, with the exception of inflammatory disease and known node positive disease at time of clinical diagnosis.

It is strongly recommended that Tc99 and blue dye, either lymphazurin dye or methylene blue dye, are used together when performing a sentinel lymph node biopsy to decrease the false negative rate of sentinel lymph node identification. Use of two dyes has been shown to have a sentinel lymph node identification rate of 97% with a false negative rate of 9.8% [71-77]. In addition to this, ACOSOG Z0011 found that removal of three or more sentinel lymph nodes further reduced the false negative rate in the setting of breast conservation [71].

We do not recommend an intraoperative frozen section at the time of a sentinel lymph node biopsy for clinically node negative (cN0) disease.

The need for further axillary surgery after the final pathology is available for the initial sentinel
lymph node biopsy should be decided upon the amount of axillary burden, clinical characteristics, and tumor characteristics [71, 78].

Axilla (treatment after neoadjuvant therapy)

For inflammatory breast cancer, we strongly recommend axillary dissection.

For clinically node negative patients (cN0) pre-neoadjuvant chemotherapy, we strongly recommend a sentinel lymph node biopsy with the use of Tc99 and blue dye (either lymphazurin blue or diluted methylene blue dye) where technically possible.

For clinically and/or pathologically suspicious/positive lymph nodes (cN1/2) pre-neoadjuvant chemotherapy, we strongly recommend sentinel lymph node biopsy with Tc99 and blue dye if clinically down staged (by physical exam or imaging) with intraoperative frozen section and immediate axillary dissection only if persistently positive nodal disease is identified. We do not recommend immediate axillary dissection, rather an attempt at a sentinel lymph node biopsy per the ACOSOG 1071 data and ongoing Alliance 11202 trial [11, 79, 80].

We strongly recommend the removal of at least three lymph nodes during sentinel biopsy with Tc99 and lymphazurin blue dye or methylene blue dye (where available) to decrease the false negative rate [11, 79, 80].

We strongly recommend performing a core needle biopsy of all suspected lymph nodes pre-neoadjuvant chemotherapy. If possible, we recommend placing a clip/marker in the lymph node at the time of core needle biopsy for localization of this lymph node at the time of surgery, to ensure removal and decrease the false negative rate of the sentinel lymph node biopsy [11].

Registry

We strongly recommend the creation of a central database/registry where data for each patient can be housed that will include diagnoses, histology, and pathology of the tumor, treatments, and outcomes including patient mortality. This will allow tracking of patient care
and outcomes that will allow future progress in disease specific survival. Per NCCN guidelines, this is the mainstay of ensuring optimal patient care and outcomes.

**Plastic and reconstructive surgery**

We strongly recommend considering reconstruction in every woman (with few exceptions such as inflammatory breast cancer or rapidly growing tumors). Immediate reconstruction with a tissue expander should be considered in all women undergoing a mastectomy, when appropriate from an oncological standpoint. Consider pre-pectoral placement of tissue expanders when able [81-83].

We strongly recommend presentation of the patient case in a multidisciplinary fashion prior to surgery, particularly when post-mastectomy radiation therapy is planned or anticipated [83]. Consider autologous tissue reconstruction following mastectomy and post-mastectomy radiation therapy given concerns of possible complications of implant-based reconstruction in this setting such as infection or need for removal and subsequent delay of oncologic care [83].

A nipple or skin sparing approach to mastectomy should be considered when appropriate. Nipple sparing mastectomy should be considered when the tumor is >1 cm from the nipple [84].

We strongly recommend tracking patient operations and outcomes, clinical outcomes as well as patient satisfaction outcomes [85-87].

**Medical Oncology**

*Neoadjuvant Chemotherapy for Early-Stage Breast Cancer (Stage I/II)*

We strongly recommend case presentation at a multidisciplinary tumor board prior to the start of surgical or systemic therapy.

We strongly recommend consideration of neoadjuvant chemotherapy (NAC) for all palpable T2 and larger tumors that are triple-negative breast cancer (TNBC) or Her2 positive breast
cancer. This allows for downstaging of breast and axillary disease and further can de-escalate the need for more aggressive surgical therapy. It also allows for physicians to use residual cancer burden (RCB) class and PCR to tailor adjuvant therapies [88-90]. As such, we highly recommend consideration of neoadjuvant chemotherapy for downstaging of axillary disease N1 to attempt a sentinel lymph node biopsy (SLNB) and avoid an axillary dissection where possible [88, 89].

In addition, we highly recommend consideration of NAC to downstage large hormone positive or negative tumors to allow consideration of breast conservation. Randomized controlled trials have shown that over 79% of patients had a clinical response with evidence of axillary nodal downstaging and increase in the rate of breast conservation [88, 89].

When starting neoadjuvant chemotherapy, we strongly recommend initiation within one month of diagnosis.

We strongly recommend considering dual Her2 therapy, when possible, for Her2 positive tumors [57, 91, 92].

We recommend staging scans with a bone scan and computerized tomography (CT) chest/abdomen/pelvis (C/A/P) prior to neoadjuvant chemotherapy.

We strongly recommend completion of the diagnostic workup including placement of tumor clips/markers prior to starting chemotherapy. This will aid in the correct surgical management following chemotherapy.

We strongly recommend TDM1 in the adjuvant setting for women with Her2 positive cancers who do not achieve a PCR [93].

We strongly recommend Capecitabine in the adjuvant setting for women with TNBC who do not achieve a PCR [94].

We highly recommend consideration of clinical trials where appropriate.
Adjuvant Considerations for Early-Stage Breast Cancer (Stage I/II)

In the adjuvant setting, the surgical pathology report is primarily utilized to determine the need for chemotherapy. Often upfront surgery is used for TNBC or Her2 overexpressed tumors when they are screen detected or smaller and node negative (cT1N0). Consider less cytotoxic therapy in the adjuvant setting where appropriate for such tumors.

We strongly recommend the use of molecular profiling where appropriate and where financially feasible for estrogen positive tumors. This may include Oncotype Dx or MammaPrint [95-100].

We strongly recommend presentation of a patient case at a multi-disciplinary tumor board prior to chemotherapy. Strong emphasis should be placed for fertility considerations in premenopausal women.

We strongly recommend consideration of Tamoxifen for premenopausal women with hormone positive disease or an aromatase inhibitor with ovarian suppression. Consideration of contraindications to use should be employed [101].

We recommend consideration of an aromatase inhibitor for postmenopausal women with hormone positive disease [7, 102].

Metastatic Breast Cancer

The goals of treating metastatic breast cancer are to extend survival and prevent disease progression while maintaining quality of life. The length of disease maintenance and extension of survival / life years depends on the stage of the disease, the number of affected organs, involvement of visceral organs vs bony disease, histologic characteristics of the tumor, and the general medical state of the patient. Metastatic breast cancer can present at the time of the
primary disease or at time of recurrence, with or without a local component.

If it is recurrent disease, we strongly recommend biopsy of the recurrence to determine histologic markers and whether there is a change from the primary disease. This will help guide appropriate therapy. The organ for biopsy should be the easiest attainable target for biopsy with minimal discomfort to the patient, if possible.

We strongly recommend case presentation at a multidisciplinary tumor board prior to the start of surgical or systemic therapy.

Therapy is geared towards the histologic characteristics of the tumor, ER/PR, Her2 status and patient factors such as age, comorbidities, history of prior therapies, menopausal status, burden of disease, evidence of visceral crisis, and willingness to participate in further therapy.

Therapeutic options for metastatic breast cancer include hormonal therapy, chemotherapy, anti-Her2 targeted therapy, targeted therapies, radiation therapy, surgery when applicable, and symptomatic/palliative therapies [103-109]. Surgery in this setting has not been shown to impact survival and should be used judiciously [103, 105, 109]. Treatment is individually determined, depending on the tumor characteristics, patient characteristics, and goals of care of the patient and their families.

**Treatment of Metastatic Her2 Positive Breast Cancer**

For patients who have documented Her2 positive metastatic breast cancer, intravenous (IV) Her2 targeted therapies, either alone or dual therapies with pertuzumab, should be considered if the patient has no significant comorbidities. A subcutaneous injectable format can be used where applicable and where able to be obtained; particularly for patients who cannot tolerate IV therapy [57].

We strongly recommend consideration of clinical trials where available.
Treatment of Metastatic ER Positive, Her2 Negative Breast Cancer

The majority of breast disease is hormone positive and Her2 negative. Therefore, this is also a common subtype in metastatic breast cancer. The mainstay for treatment of metastatic, hormone positive disease is hormone therapy. Chemotherapy can be considered if appropriate depending on disease burden and patient goals of life. Other therapies such as radiation should be considered for symptomatic disease.

Treatment of Metastatic Triple Negative Breast Cancer (TNBC)

The mainstay for treatment of metastatic triple negative breast cancer is chemotherapy. In addition, bisphosphonates and Denosumab should be considered for bony metastatic disease, in addition to targeted therapy based on tumor characteristics. Clinical trial consideration is strongly recommended [90].

We strongly recommend evaluation of PD-L1 expression to help guide therapy. Other therapies such as radiation should be considered for symptomatic disease.

Radiation Oncology

We strongly recommend that all women with breast cancer who undergo breast conservation should consider adjuvant whole breast radiation therapy if under the age of 70. Strongly consider a boost to the lumpectomy cavity in the setting of breast conservation [69, 70, 110-112].

We recommend hypofractionation when possible and where feasible. Strongly consider 3D conformal therapy and intensity-modulated radiation therapy (IMRT) where appropriate [110, 112].

Following a mastectomy, consider radiation therapy for node positive disease, close or positive
margins, high risk disease, or medial tumors [113, 114].

We strongly recommend consideration of regional nodal radiation when appropriate.

Consider the omission of radiation therapy for women over the age of 70 with small, ER positive, clinically node negative tumors (cT1N0). The Cancer and Leukemia Group B (CALGB) study supports this [115].

Intraoperative radiation therapy does not have significant long-range studies currently to support widespread use. Use where appropriate and if technology is available [116].

To avoid a delay, timing of radiation therapy should not exceed 4-6 weeks following oncologic surgery [117].

**Young Women with Breast Cancer**

Young women with breast cancer are often defined as age less than or equal to 40 and comprise 5-6% of the overall breast cancer population. This definition is consistent with previous guidelines [118, 119]. Though studies have shown that younger women can present with more aggressive tumors and have an increased risk of relapse, there is no clear indication that more aggressive therapy than indicated will affect outcome. International guidelines on the treatment of young women support this as well. We therefore recommend treating young women the same as older women with breast cancer when related to treatment [120].

**Breast Cancer in Pregnancy**

Breast cancer in pregnancy is defined as a breast cancer diagnosis during pregnancy or in the first postpartum year. This is a rare occurrence and happens in approximately 1 in 3000 pregnant women and is the second most common malignancy affecting pregnancy.

We strongly recommend operative intervention where there is no need for neoadjuvant chemotherapy. The preferred timing for operative intervention is in the 2nd trimester, to allow for completion of organogenesis in the first trimester.
We strongly recommend using Tc99 alone for the purposes of a sentinel lymph node biopsy when performing the procedure on a pregnant woman. Lymphazurin blue has been associated with a risk of allergic reactions and anaphylaxis while methylene blue is associated with jejunal atresia during the first trimester and should therefore not be used in pregnancy [7, 121, 122].

We strongly recommend the use of neoadjuvant chemotherapy when appropriate based on tumor characteristics and patient factors. If administered, this should be initiated after the first trimester and should be completed by the 35th week of pregnancy. Chemotherapy administered during the first trimester or when organogenesis is taking place from the 4-12th week of pregnancy, poses an elevated risk of fetal teratogenesis and for this reason should be avoided [122-126].

Tamoxifen should be avoided in pregnancy as it is associated with a 20% risk of birth defects and is therefore contraindicated in pregnancy [122].

Surgical considerations should be driven by the timing of surgery. Due to the risk of fetal loss, this should be avoided in the first trimester when at all possible. When performed in the first and second trimesters, mastectomy is the general recommendation. To minimize the time under anesthesia, consideration should be given to delayed reconstructive surgery if possible [122-126].

Breast conservation remains an option for pregnant women if they can deliver the baby safely and then proceed to breast conservation. This should not cause a delay to radiation therapy and would therefore be a reasonable option. However, radiation therapy is not recommended during pregnancy.

We strongly recommend the involvement of high risk maternal-fetal medicine specialists in addition to obstetricians in a multidisciplinary approach for optimal outcomes in pregnancy related breast cancer.
While termination of pregnancy remains an option to the patient, a multi-disciplinary approach to breast cancer care during pregnancy allows for care of both the baby and the mother.

**DISCUSSION**

The aim of this manuscript is to serve as a guideline for the care of breast cancer patients in Bosnia and Hercegovina. This is the first multidisciplinary breast cancer consortium with the goal of establishing and publishing national guidelines. These recommendations are aimed to organize a standard of care that is expected for breast cancer patients, as established by well-defined international guidelines. Recommendations are evidence-based per multidisciplinary section and have considered regional and national resource availability. We hope this will aid the health ministry in providing resources that might be absent. We are optimistic that the guidelines will encourage local providers to elevate the standard of care for breast cancer patients in Bosnia and Hercegovina.

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